

# Watt's Happening? #172

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## An awesome future



*Solar farms can be real farms! Mixing sustainable agriculture with sustainable energy is a growing trend.*

**T**he future could be awesome. We could enjoy cleaner air and water, and be healthier because of it. Reduced risks to health and property as risks from storm, flood and fire fall. Cheap, clean energy, and jobs for everybody in every occupation imaginable. An unprecedented surge in innovation, invention and business opportunities.

How we gonna do this? In three words: solve climate change.

Decarbonize our economy and our lifestyles. Get serious about fixing our broken planet.

### STAND WITH THE CHILDREN

Looks like the kids are right: this is our last chance for a habitable world. If we allow the Earth to warm any more, really nasty self-perpetuating carbon feedbacks, like methane from melting tundra, will kick in, the Greenland and Antarctic ice sheets will slide into the ocean raising sea levels overnight. Nasty, big time.

Extinction Rebellion, Youth Climate Strikers and pipeline protesters are not crazy extremists. They're just the only people showing appropriate urgency. We need to listen to them. It's now or, literally, never.

Big job. Yep. We'll have to replace every vehicle, every power plant, every home furnace with zero and ultra-low carbon options, and we'll need to do it very quickly.

You may well ask, how will we ever accomplish such an absurdly immense task?

## IS IT POSSIBLE?

First we have to be reassured that it is possible, and it is. Nothing new is needed (except political wisdom and leadership!). We have all the technology, knowledge and expertise we need to build a much cleaner, healthier, low-risk world filled with expanding job opportunities. Right now.

Modern, automated factories can be quickly retooled and reprogrammed to make just about anything. If you're making combustion cars and trucks now, in six months you could be making electric cars and trucks . . . or wind turbines.

Solar and wind power are already the fastest growing energy sources in the world. Why? Because they're making money for investors, and they are not only the cleanest energy sources ever invented, but also quickly becoming the cheapest. No fuel needed, no pollution, quickly scaled up, distributed and installed.

Just putting solar on every suitable roof in Canada would power Canada.

You want jobs? There are more folks employed in renewables and efficiency in Canada than in oil and gas now, and that spread is increasing every day.

## HOW WILL WE DO IT?

Second, we need a clear, simple goal that we can wrap our heads around, and here it is in just two

words: *electrify everything!*

When we drive a car using gas, more than two thirds of the energy is lost in burning the fuel: heat, exhaust, internal mechanical friction from over a thousand moving parts.

Electric cars charged with renewable energy use less than one-third of the energy per mile of a fossil fuel powered car. And they're faster, safer, lower maintenance with only a handful of moving parts, and you can make your own electric "fuel" from the sunlight falling on your garage roof!

Electric heat pumps for heating your home use one-third of the energy to do the same job as a gas furnace.

If we burn fossils to make electricity in large power plants, 60% of the energy is lost in waste heat and pollution.

## RUN THE NUMBERS

So, run the numbers: when we power the world with renewable electricity, we will need less than one half of the energy that we use today to accomplish all of the same things. Get that last part – "*to accomplish all of the same things.*"

Not a world filled with cutbacks and hardship, just brainpower and common sense.

Think of a wire, a high tension power line, with electrical energy flowing through it. That energy is invisible, but in that wire could be enough electricity to power a large city.

That electrical energy is travelling close to the speed of light, and when properly interconnected, capable of arriving anywhere in the world where and when it is needed, instantly.

Now compare that to a pipeline, filled with high-carbon toxic liquids or toxic gases, surrounded by protesters. Which is better?

It's a no-brainer. Stand with our children. Last call to make a better world.

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